

REMARKS/ARGUMENTS

Claim 1 has been amended to change the "consisting essentially of" language to "consisting of". Claims 49-56 have been cancelled. Eight claims (Claims 1, 2, 18, 20, 21, 25, 26 and 29) are currently pending in the application.

Applicants have carefully reviewed the Office Action of March 8, 2007. Reconsideration of the Examiner's rejection of the claims is respectfully requested.

Election/Restrictions

The Examiner has imposed a restriction requirement on claims 49-56, suggesting that the claims include essential components that were not essential in the originally presented and claimed invention. In the interest of advancing the application to allowance, Applicants have cancelled the restricted claims without prejudice.

Claim Rejection under 35 U.S.C. §102 (b)

Claims 1, 2, 18, 20, 21, 25, 26, and 29 stand rejected as being anticipated under 35 U.S.C. §102 (b) over JP 59067021 to Kitani (hereinafter "Kitani"). The Examiner has maintained that Kitani teaches "expandable polystyrene particles for foam articles from molding coated with a coating composition comprising polyethylene glycol, polyethylene polyolefin wax and calcium stearate" emphasizing his position that "Kitani makes it clear that a mixture of polyethylene wax, ethylene glycol and the stearate metal salt may be used as the non-solvent for the expandable styrene particles".

Applicants agree with the Examiner's latter statement, that Kitani discloses the use of ethylene-glycol, however,

ethylene glycol is not polyethylene glycol, which is used in the present invention.

The present invention according to the amended claims is directed to polystyrene particles containing a blowing agent that is coated with a coating composition that includes a liquid part and a solid part. The liquid part consists of greater than 0.01% by weight based on the weight of the particles, of polyethylene glycol having an average molecular weight ranging from about 200 to about 800 (ethylene glycol has a molecular weight of 62). The solid part consists of greater than 0.01% by weight based on the weight of the particles, of polyolefin wax and greater than 0.01% by weight, based on the weight of the particles, of a metal salt of higher fatty acids. So the composition of Kitani is not "essentially the same as the claimed composition" as the Examiner suggests.

Polyethylene glycol is a polyether. Ethylene glycol is a simple diol.

The Examiner also indicates that "the USPTO does not have at its disposal the tools or facilities deemed necessary to make physical determinations of the sort". However, those skilled in the art will readily recognize the difference between a monomer (ethylene glycol) and a polymer (the polyether polyethylene glycol having an average molecular weight ranging from about 200 to about 800). Taken to its extreme, the Examiner's position would dictate that styrene monomer could replace the polystyrene in the expandable polystyrene particles of the invention. The inoperability of this extreme example is obvious as is the Examiner's position that ethylene glycol anticipates polyethylene glycol.

Kitani does not disclose the use of polyethylene glycol.

In order to anticipate a claim, a prior art reference must disclose every limitation in the claim.

As Kitani discloses the use of ethylene glycol in coatings for EPS particles and does not disclose or in any way suggest using polyethylene glycol in such coatings, Kitani cannot anticipate the present claims.

As such, the rejection of Claims 1, 2, 18, 20, 21, 25, 26, and 29 under 35 U.S.C. 102 (b) should be withdrawn.

Claim Rejections under 35 U.S.C. §103 (a)

Claims 1, 2, 18, 20, 21, 25, 26 and 29 stand rejected under 35 U.S.C. § 103(a) as being obvious over JP 60-203648 to Matsui et al. (hereinafter "Matsui '648") independently in combination with either of JP 60-203647 to Matsui et al. (hereinafter "Matsui '647") or JP 04-057837 to Ikeda et al. (hereinafter "Ikeda"); and over U.S. Patent No. 6,277,491 to Sakoda et al. (hereinafter "Sakoda") or JP 2002-338725 to Imai et al. (hereinafter "Imai") independently in combination with either of JP 53-109565 (hereinafter "JP '565"), JP 53-127567 (hereinafter "JP '567"), Matsui '647 or Ikeda.

The Standard for Obviousness under 35 U.S.C. §103 (a)

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
35 U.S.C. § 103(a).

"Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented." *KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1734 (2007) quoting *Graham v. John Deere of Kansas City*, 383 U.S. 1, 17-18, 86 S.Ct. 684 (1966).

"The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." 127 S.Ct. at 1739.

"Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does." 127 S.Ct. at 1741.

A patent claim cannot be proved obvious merely by showing that the combination of elements was obvious to try except "[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions." 127 S.Ct. at 1742.

The Invention

The invention, as now recited in the amended claims, particularly amended claim 1, relates to expandable

polystyrene particles containing a blowing agent for forming a foam container in a molding process. These expandable polystyrene particles are coated with a coating composition consisting of a liquid part and a solid part where the liquid part consists of a) polyethylene glycol having an average molecular weight from 200 to 800; and the solid part consists of b) a polyolefin wax, c) a metal salt of higher fatty acids selected from the group consisting of zinc, magnesium, calcium, and aluminum salts of stearic, lauric and myristic acid and optionally d) a solid polyethylene glycol having an average molecular weight of from about 900 to about 10,000; and e) a fatty bisamide or fatty amide.

The polyolefin wax of component b) is polyethylene wax with a particle size of about 6 microns to about 60 microns and an average molecular weight of about 650 to about 1000. Claim 1 further recites that the foam container is constructed to hold foods and liquids and that the coating composition improves at least the leakage resistance of the foam container relative to the foods and liquids and the rim strength of the foam container.

The rejection under 35 U.S.C. § 103(a) over
Matsui '648 in combination with Matsui '647

Scope and Content of the Prior Art

Matsui '648 discloses coating polystyrene resin beads containing a blowing agent using a composition containing surface modifiers, silicone oil, a lipophilic cationic surfactant and polyethylene glycol in the form of an aqueous emulsion. The silicone oil is included as a binder to overcome the problem of weak surface modifier adhesion to the beads (page 3, paragraph 7 of the Examiner's translation).

Matsui '647 discloses coating EPS with a composition containing 0.01- 2 wt.% a metallic soap, either partial or complete ester from higher fatty acid and polyhydric alcohol and 0.005-0.2 wt.% silicone oil.

Differences Between the Prior Art and the Claims

The Examiner admits that Matsui '648 differs from the claimed invention in that the coating composition does not include polyethylene wax. Applicants point out that Matsui '648 further includes silicone oil and a lipophilic cationic surfactant, which are excluded from the claims as amended ("The transitional phrase 'consisting of' excludes any element, step, or ingredient not specified in the claim". MPEP 2111.03 citing *In re Gray*, 53 F.2d 520, 11 USPQ 255 (CCPA 1931)).

The Examiner puts forth Matsui '647 as providing the deficiency in the Matsui '648 disclosure suggesting that it would have been well known to one skilled in the art to incorporate both the polyethylene wax and fatty acid metal salt into the coating composition of Matsui '648.

Taking the Examiner's position to its logical conclusion, the emulsion coating according to the "obvious" combination of Matsui '648 and Matsui '647 would include all of the following: surface modifiers, silicone oil, a lipophilic cationic surfactant, polyethylene glycol a metallic soap, either partial or complete ester from higher fatty acid and polyhydric alcohol.

The cited combination requires the inclusion of silicone oil as a binder to overcome the problem of weak surface modifier adhesion to the beads and a lipophilic cationic surfactant as an antistatic agent.

There is no disclosure or suggestion directing one skilled in the art to remove silicone oil as a binder or the lipophilic cationic surfactant as an antistatic agent. The present claims exclude such materials. The transitional phrase "consisting of" indicates that "the invention only includes those ingredients specifically enumerated in the claim". Ex Parte Davis, 80 U.S.P.Q. 448, 449-50 (1948).

The Level of Ordinary Skill in the Pertinent Art

The prior art as presented by the Examiner outlines an approach where polystyrene resin beads containing a blowing agent are coated with a composition to which is added a series of ingredients to address specific attributes. For example, Matsui '648 requires the use of an aqueous (i.e., water containing) emulsion that includes silicone oil as a binder, a lipophilic cationic surfactant as an antistatic agent and polyethylene glycol. The Examiner's combination would teach the further addition of polyethylene wax and a fatty acid metal salt based on Matsui '647.

The approach advocated by the Examiner describes the skilled artisan as identifying a base formula and adding components to it to try and arrive at a set of desirable properties.

To that end, the Examiner's combination of prior art teaches away from the present invention, because a skilled artisan looking to provide containers having improved leakage resistance and rim strength would not look to remove an additive such as silicone oil, a binder disclosed as improving particle adhesion.

Claims 1, 2, 18, 20, 21, 25, 26, and 29 are not obvious in view of the combination of Matsui '648 and Matsui '647

The present invention is directed to coated EPS particles that provide containers having improved leakage resistance and rim strength. EPS beads containing a blowing agent coated with a coating composition consisting of a polyethylene glycol liquid part and a solid part consisting of polyolefin wax, a metal salt of higher fatty acids and optionally a solid polyethylene glycol and/or a fatty bisamide or fatty amide. The claimed coating composition provides the benefits of the invention. Excluding materials or including extraneous materials interfere with the desired result.

There is nothing in the disclosure of Matsui '648 or Matsui '647 that would predict the results or properties of the claimed coated EPS beads, because a skilled artisan would not remove the required silicone oil and lipophilic cationic surfactant components of the Examiner's coating and expect any desirable results, let alone improved leakage resistance and improved rim strength as in the present invention.

Further, the Examiner has not provided any reason that would have prompted a person of ordinary skill in the art to remove the silicone oil binder and lipophilic cationic surfactant antistatic agent from the Matsui '648/Matsui '647 bead coating.

Additionally, the addition and subtraction of various components to the bead coating of Matsui '648/Matsui '647 would require a virtually infinite number of combinations that cannot provide the basis for obviousness under 35 U.S.C. § 103(a).

Finally, the combination of Matsui '648 with Matsui '647 does not teach all of the limitations in the claims because silicone oil and the lipophilic cationic surfactant are

excluded in the presently claimed invention as indicated above.

For all of the reasons set forth above, Claims 1, 2, 18, 20, 21, 25, 26 and 29 are not obvious over Matsui '648 in view of Matsui '647 and the rejection under 35 U.S.C. § 103(a) should be withdrawn.

The rejection under 35 U.S.C. § 103(a) over
Matsui '648 in combination with Ikeda

Scope and Content of the Prior Art

Matsui '648 discloses coating polystyrene resin beads containing a blowing agent using a composition containing surface modifiers, silicone oil, a lipophilic cationic surfactant and polyethylene glycol in the form of an aqueous emulsion. The silicone oil is included as a binder to overcome the problem of weak surface modifier adhesion to the beads (page 3, paragraph 7 of the Examiner's translation).

According to its abstract, Ikeda discloses an expandable thermoplastic resin particle comprising a thermoplastic resin particle (e.g., polystyrene particle) containing a hydrocarbon having a boiling point lower than the softening point of the resin (e.g., n-pentane) is coated with 0.005-0.05 wt.% polyethylene wax comprising a crystalline ethylene homopolymer having a mol. wt. of 400-900 and a melting point of 85-110 °C. The particles have improved fusion between expanded particles when molded without adversely affecting the resistance to leakage of a molded item such as a cup.

Differences Between the Prior Art and the Claims

The Examiner admits that Matsui '648 differs from the claimed invention in that the coating composition does not

include polyethylene wax. Applicants point out that Matsui '648 further includes silicone oil and a lipophilic cationic surfactant, which are excluded from the claims as amended ("The transitional phrase 'consisting of' excludes any element, step, or ingredient not specified in the claim". MPEP 2111.03 citing *In re Gray*, 53 F.2d 520, 11 USPQ 255 (CCPA 1931)).

The Examiner puts forth Ikeda as providing the deficiency in the Matsui '648 disclosure suggesting that it would have been well known to one skilled in the art to incorporate the polyethylene wax of Ikeda into the coating composition of Matsui '648.

Taking the Examiner's position to its logical conclusion, the emulsion coating according to the "obvious" combination of Matsui '648 and Ikeda would include all of the following: surface modifiers, silicone oil, a lipophilic cationic surfactant, polyethylene glycol and polyethylene wax. The Examiner suggests that including a metal salt of higher fatty acids is disclosed by Ikeda, but Applicants are not able to point to any such language in the abstract of Ikeda.

The cited combination requires the inclusion of silicone oil as a binder to overcome the problem of weak surface modifier adhesion to the beads and a lipophilic cationic surfactant as an antistatic agent.

There is no disclosure or suggestion directing one skilled in the art to remove silicone oil as a binder or the lipophilic cationic surfactant as an antistatic agent. The present claims exclude such materials. The transitional phrase "consisting of" indicates that "the invention only includes those ingredients specifically enumerated in the claim". *Ex Parte Davis*, 80 U.S.P.Q. 448, 449-50 (1948).

The Level of Ordinary Skill in the Pertinent Art

The prior art as presented by the Examiner outlines an approach where polystyrene resin beads containing a blowing agent are coated with a composition to which is added a series of ingredients to address specific attributes. For example, Matsui '648 requires the use of an aqueous (i.e., water containing) emulsion that includes silicone oil as a binder, a lipophilic cationic surfactant as an antistatic agent and polyethylene glycol. The Examiner's combination would teach the further addition of polyethylene wax based on Ikeda.

The approach advocated by the Examiner describes the skilled artisan as identifying a base formula and adding components to it to try and arrive at a set of desirable properties.

To that end, the Examiner's combination of prior art teaches away from the present invention, because a skilled artisan looking to provide containers having improved leakage resistance and rim strength would not look to remove an additive such as silicone oil, a binder disclosed as improving particle adhesion.

Claims 1, 2, 18, 20, 21, 25, 26, and 29 are not obvious in view of the combination of Matsui '648 and Matsui '647

The present invention is directed to coated EPS particles that provide containers having improved leakage resistance and rim strength. EPS beads containing a blowing agent coated with a coating composition consisting of a polyethylene glycol liquid part and a solid part consisting of polyolefin wax, a metal salt of higher fatty acids and optionally a solid polyethylene glycol and/or a fatty bisamide or fatty amide. The claimed coating composition provides the benefits of the

invention. Excluding materials or including extraneous materials interfere with the desired result.

There is nothing in the disclosure of Matsui '648 or Ikeda that would predict the results or properties of the claimed coated EPS beads, because a skilled artisan would not remove the required silicone oil and lipophilic cationic surfactant components of the Examiner's coating and expect any desirable results, let alone improved rim strength as in the present invention.

Further, the Examiner has not provided any reason that would have prompted a person of ordinary skill in the art to remove the silicone oil binder and lipophilic cationic surfactant antistatic agent from the Matsui '648/Ikeda bead coating.

Additionally, the addition and subtraction of various components to the bead coating of Matsui '648/Ikeda would require a virtually infinite number of combinations that cannot provide the basis for obviousness under 35 U.S.C. § 103(a).

Finally, the combination of Matsui '648 with Ikeda does not teach all of the limitations in the claims because silicone oil and the lipophilic cationic surfactant are excluded in the presently claimed invention as indicated above.

For all of the reasons set forth above, Claims 1, 2, 18, 20, 21, 25, 26 and 29 are not obvious over Matsui '648 in view of Ikeda and the rejection under 35 U.S.C. § 103(a) should be withdrawn.

The rejection under 35 U.S.C. § 103(a) over Sakoda in
view JP '565, JP '567, Matsui '647 or Ikeda

Scope and Content of the Prior Art

Sakoda discloses coating expandable thermoplastic resin beads with a composition containing a fluorine-containing block copolymer and a metal salt of a higher fatty acid. Prior to coating with the fluorine-containing block copolymer, the beads are coated with liquid polyethylene glycol or liquid polybutene. The beads are used to make expanded molded vessels for foods and drinks containing oil and fat components. The fluorine-containing block copolymer prevents the permeation of oils and fats and aqueous surfactant solutions through the walls of the vessel.

JP '565 and JP '567 each disclose coating EPS particles with a polyethylene wax.

Matsui '647 discloses coating EPS with a composition containing 0.01- 2 wt.% a metallic soap, either partial or complete ester from higher fatty acid and polyhydric alcohol and 0.005-0.2 wt.% silicone oil.

According to its abstract, Ikeda discloses an expandable thermoplastic resin particle comprising a thermoplastic resin particle (e.g., polystyrene particle) containing a hydrocarbon having a boiling point lower than the softening point of the resin (e.g., n-pentane) is coated with 0.005-0.05 wt.% polyethylene wax comprising a crystalline ethylene homopolymer having a mol. wt. of 400-900 and an melting point of 85-110 °C. The particles have improved fusion between expanded particles when molded without adversely affecting the resistance to leakage of a molded item such as a cup.

Differences Between the Prior Art and the Claims

The Examiner admits that Sakoda differs from the claimed invention in that the coating composition does not include polyethylene wax. Applicants point out that Sakoda further includes a fluorine-containing block copolymer, which is excluded from the claims as amended.

The Examiner puts forth JP '565, JP '567, Matsui '647 and Ikeda as providing the deficiency in the Sakoda disclosure suggesting that it would have been well known to one skilled in the art to incorporate polyethylene wax into the coating composition of Sakoda based on the combination of references.

Taking the Examiner's position to its logical conclusion, the coating according to the "obvious" combination of Sakoda, JP '565, JP '567, Matsui '647 and Ikeda would include first coating the beads with liquid polyethylene glycol or liquid polybutene and then coating the beads with a coating containing all of the following: fluorine-containing block copolymer, surface modifiers, silicone oil, and polyethylene wax.

The cited combination requires a separate application of liquid polyethylene glycol and then an application of a coating composition containing a fluorine-containing block copolymer to prevent leakage and silicone oil as a binder to overcome the problem of weak surface modifier adhesion to the beads.

There is no disclosure or suggestion directing one skilled in the art to remove silicone oil as a binder or the fluorine-containing block copolymer as a leak preventative. The present claims exclude such materials. The transitional phrase "consisting of" indicates that "the invention only includes those ingredients specifically enumerated in the claim". Ex Parte Davis, 80 U.S.P.Q. 448, 449-50 (1948).

The Level of Ordinary Skill in the Pertinent Art

The prior art as presented by the Examiner outlines an approach where polystyrene resin beads containing a blowing agent are coated with a liquid polyethylene glycol and then coated with a composition to which is added a series of ingredients to address specific attributes. For example, Sakoda requires the use of a coating containing a fluorine-containing block copolymer and a metal salt of a higher fatty acid. The Examiner's combination would teach the further addition of silicone oil as a binder and polyethylene wax based on JP '565, JP '567, Matsui '647 and Ikeda.

The approach advocated by the Examiner describes the skilled artisan as identifying a base formula and adding components to it to try and arrive at a set of desirable properties.

To that end, the Examiner's combination of prior art teaches away from the present invention, because a skilled artisan looking to provide containers having improved leakage resistance and rim strength would not look to remove an additive such as silicone oil, a binder disclosed as improving particle adhesion or fluorine-containing block copolymer disclosed as preventing leakage.

Claims 1, 2, 18, 20, 21, 25, 26, and 29 are not obvious
in view of the combination of Sakoda and
JP '565, JP '567, Matsui '647 and Ikeda

The present invention is directed to coated EPS particles that provide containers having improved leakage resistance and rim strength. EPS beads containing a blowing agent coated with a coating composition consisting of a polyethylene glycol liquid part and a solid part consisting of polyolefin wax, a

metal salt of higher fatty acids and optionally a solid polyethylene glycol and/or a fatty bisamide or fatty amide. The claimed coating composition provides the benefits of the invention. Excluding materials or including extraneous materials interfere with the desired result.

There is nothing in the disclosure of Sakoda, JP '565, JP '567, Matsui '647 and Ikeda that would predict the results or properties of the claimed coated EPS beads, because a skilled artisan would not remove the required silicone oil and fluorine-containing block copolymer components of the Examiner's coating and expect any desirable results, let alone improved rim strength and leakage resistance as in the present invention.

Further, the Examiner has not provided any reason that would have prompted a person of ordinary skill in the art to remove the silicone oil binder and fluorine-containing block copolymer leak preventative from the Sakoda et al. combination bead coating.

Additionally, the addition and subtraction of various components to the bead coating of the combined Sakoda, JP '565, JP '567, Matsui '647 and Ikeda would require a virtually infinite number of combinations that cannot provide the basis for obviousness under 35 U.S.C. § 103(a).

Finally, the combination of Sakoda with JP '565, JP '567, Matsui '647 and Ikeda does not teach all of the limitations in the claims because silicone oil and the fluorine-containing block copolymer are excluded in the presently claimed invention as indicated above.

For all of the reasons set forth above, Claims 1, 2, 18, 20, 21, 25, 26 and 29 are not obvious over Sakoda in view of JP '565, JP '567, Matsui '647 and/or Ikeda and the rejection under 35 U.S.C. § 103(a) should be withdrawn.

The rejection under 35 U.S.C. § 103(a) over Imai
in view JP '565, JP '567, Matsui '647 or Ikeda

Scope and Content of the Prior Art

Imai discloses EPS beads containing isopentane as a blowing agent, which are coated with zinc stearate and optionally coated with one or more of stearamide or other higher fatty acid amide, hardened castor oil, hardened soybean oil, or other higher aliphatic acid glyceride as a melt adhesion promoting agent; and one or more of glycerine, polyethylene glycol, aliphatic acid monoglyceride as an antistatic agent.

JP '565 and JP '567 each disclose coating EPS particles with a polyethylene wax.

Matsui '647 discloses coating EPS with a composition containing 0.01-2 wt.% a metallic soap, either partial or complete ester from higher fatty acid and polyhydric alcohol and 0.005-0.2 wt.% silicone oil.

According to its abstract, Ikeda discloses an expandable thermoplastic resin particle comprising a thermoplastic resin particle (e.g., polystyrene particle) containing a hydrocarbon having a boiling point lower than the softening point of the resin (e.g., n-pentane) is coated with 0.005-0.05 wt.% polyethylene wax comprising a crystalline ethylene homopolymer having a mol. wt. of 400-900 and an melting point of 85-110 °C. The particles have improved fusion between expanded particles when molded without adversely affecting the resistance to leakage of a molded item such as a cup.

Differences Between the Prior Art and the Claims

The Examiner admits that Imai differs from the claimed invention in that the coating composition does not include polyethylene wax.

The Examiner puts forth JP '565, JP '567, Matsui '647 and Ikeda as providing the deficiency in the Imai disclosure suggesting that it would have been well known to one skilled in the art to incorporate polyethylene wax into the coating composition of Imai based on the combination of references.

Taking the Examiner's position to its logical conclusion, the coating according to the "obvious" combination of Imai, JP '565, JP '567, Matsui '647 and Ikeda would include coating the beads with a coating containing zinc stearate, a melt adhesion promoting agent selected from one or more of stearamide or other higher fatty acid amide, hardened castor oil, hardened soybean oil, or other higher aliphatic acid glyceride; an anti static agent selected from one or more of glycerine, polyethylene glycol, and aliphatic acid monoglyceride; fluorine-containing block copolymer, surface modifiers, silicone oil, and polyethylene wax.

The cited combination requires use of zinc stearate, a melt adhesion promoting agent, an anti static agent; and agent to prevent leakage, and a binder to overcome the problem of weak surface modifier adhesion to the beads.

There is no disclosure or suggestion directing one skilled in the art to remove silicone oil as a binder or the fluorine-containing block copolymer as a leak preventative. The present claims exclude such materials. The transitional phrase "consisting of" indicates that "the invention only includes those ingredients specifically enumerated in the claim". Ex Parte Davis, 80 U.S.P.Q. 448, 449-50 (1948).

The Level of Ordinary Skill in the Pertinent Art

The prior art as presented by the Examiner outlines an approach where polystyrene resin beads containing a blowing agent are coated with a zinc stearate, a melt adhesion promoting agent, and an anti static agent according to Imai, as well as the fluorine-containing block copolymer according to Sakoda and the silicone oil as a binder and polyethylene wax based on JP '565, JP '567, Matsui '647 and Ikeda.

The approach advocated by the Examiner describes the skilled artisan as identifying a base formula and adding components to it to try and arrive at a set of desirable properties.

To that end, the Examiner's combination of prior art teaches away from the present invention, because a skilled artisan looking to provide containers having improved leakage resistance and rim strength would not look to remove an additive such as silicone oil, a binder disclosed as improving particle adhesion or fluorine-containing block copolymer disclosed as preventing leakage or stearamide or other higher fatty acid amide, hardened castor oil, hardened soybean oil, or other higher aliphatic acid glyceride as a melt adhesion promoting agent.

Claims 1, 2, 18, 20, 21, 25, 26, and 29 are not obvious
in view of the combination of Sakoda and
JP '565, JP '567, Matsui '647 and Ikeda

The present invention is directed to coated EPS particles that provide containers having improved leakage resistance and rim strength. EPS beads containing a blowing agent coated with a coating composition consisting of a polyethylene glycol liquid part and a solid part consisting of polyolefin wax, a metal salt of higher fatty acids and optionally a solid

polyethylene glycol and/or a fatty bisamide or fatty amide. The claimed coating composition provides the benefits of the invention. Excluding materials or including extraneous materials interfere with the desired result.

There is nothing in the disclosure of Imai, JP '565, JP '567, Matsui '647 and Ikeda that would predict the results or properties of the claimed coated EPS beads, because a skilled artisan would not remove the required melt adhesion promoting agent, silicone oil and fluorine-containing block copolymer components of the Examiner's coating and expect any desirable results, let alone improved rim strength and leakage resistance as in the present invention.

Further, the Examiner has not provided any reason that would have prompted a person of ordinary skill in the art to remove the melt adhesion promoting agent, silicone oil binder and fluorine-containing block copolymer leak preventative from the Imai et al. combination bead coating.

Additionally, the addition and subtraction of various components to the bead coating of the combined Imai, JP '565, JP '567, Matsui '647 and Ikeda would require a virtually infinite number of combinations that cannot provide the basis for obviousness under 35 U.S.C. § 103(a).

Finally, the combination of Imai with JP '565, JP '567, Matsui '647 and Ikeda does not teach all of the limitations in the claims because the melt adhesion promoting agent, silicone oil and the fluorine-containing block copolymer are excluded in the presently claimed invention as indicated above.

For all of the reasons set forth above, Claims 1, 2, 18, 20, 21, 25, 26 and 29 are not obvious over Imai in view of JP '565, JP '567, Matsui '647 and/or Ikeda and the rejection under 35 U.S.C. § 103(a) should be withdrawn.

Summary and Conclusion

The claimed invention, particularly that of amended, independent Claim 1, is not taught, disclosed, suggested, or in any way predicted in any of the cited references or in any combination of cited references. The dependent claims are patentable on their own merits in addition to being directly or indirectly dependent on a patentable Claim 1.

Applicants, for the first time, have found that expandable polystyrene particles used in forming a foam container in a molding process and coated with the coating composition of Claim 1 including the particle size and molecular weight of the polyethylene wax are important features for the desired end result of improving at least the leakage resistance of foods and liquids through the foam containers and the rim strength of the foam containers which are made of these expandable polystyrene particles in a molding process.

The inventorship remains as originally indicated.

Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,



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